

Remarks/Arguments

This Amendment is being filed in response to the Official Action dated June 10, 2003. Per the petition and fee submitted herewith, Applicants invoke the benefit of 37 CFR 1.136 to secure a two-month extension of time up to and including November 10, 2003. Please charge any further fees due, or credit any overpayment, to deposit account no 50-0573.

Status of the Claims

Claims 1-36 are in the application.

Claims 16-31 and 33-36 have been withdrawn from consideration.

Claims 1-15 and 32 have been rejected.

By way of this amendment, claims 5, 12 and 16-36 have been canceled, claims 1, 2, 4, 6, 13 and 15 have been amended and new claims 37-47 have been added.

Upon entry of this amendment, claims 1-4, 6-11, 13-15 and 37-47 will be pending.

Summary of the Amendment

Claim 1 has been amended to incorporate the limitations of claim 5 (elimination of CD34+ cells) and claim 12 (the disseminated cell marker is an epithelial cell marker), which have been canceled as redundant in view of the amendment of claim 1. Additionally, claim 1 has been amended to recite that the disseminated epithelial cell marker is a "differentiation specific antigen." As noted on page 15 of the specification, the marker can be a differentiation specific antigen or an oncofetal protein. Claim 1 now recites that the marker is a differentiation specific antigen.

Claims 2, 4 and 15 have been amended to be consistent with claim 1. As amended, each claim refers to the marker as a "disseminated epithelial cell marker."

Claims 4 and 13 have been amended to delete reference to "carcinoembryonic antigen", which is an oncofetal protein, not a differentiation specific antigen.

Claim 6 has been amended to change its dependency from canceled claim 5 to claim 1.

Claim 15 has been amended to more clearly and precisely define the invention. As amended, the claim clearly recited that “the disseminated epithelial cell marker is a cell marker for a metastatic colon cancer cell.”

Claims 16-31 and 33-36, which have been withdrawn from consideration, have been canceled without prejudice. Applicants reserve the right to pursue subject matter of the claims in a divisional application.

Claim 32 has been canceled as being redundant with claim 1 as amended.

New claim 37 refers to the method of the invention using a specific type of sample: isolated mononuclear cells from blood. The specification, particularly the examples, relate to embodiments using isolated blood mononuclear cells.

New claims 38-47 correspond to 2-4, 6, 9, 10, 11, 13, 14 and 15, respectively, but are dependent on new claim 37 instead of claim 1.

Support for the amendments of the claims and the new claims are found throughout the specification. No new matter has been added.

Rejection under 35 U.S.C. §112, second paragraph

Claims 15 and 32 have been rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicants regard as their invention.

It is pointed out that as filed, the term “the disseminated cell” in claim 15 lacks antecedent basis. Claim 15 has been amended to refer to markers instead of cells. As amended, claim 15 is clear and definite and in compliance with the requirements of the second paragraph of section 112.

Claim 32 has been canceled and the rejection as applied to claim 32 is moot.

Applicants respectfully request that the rejection of claims 15 and 32 under 35 U.S.C. §112, second paragraph, as applied to claim 15 be withdrawn.

Rejection under 35 U.S.C. §112, first paragraph

Claims 1-15 and 32 have been rejected under 35 U.S.C. §112, first paragraph, because the specification, while enabling for detecting the presence of a disseminated epithelial cell marker in a sample comprising eliminating CD34+ cells, does not reasonably provide enablement for detecting the presence of any disseminated cell marker comprising eliminating illegitimate transcription by any means.

Claim 1 has been amended to recite that the disseminated cell marker is a disseminated epithelial cell marker and that the method comprises eliminating CD34+ cells. Each of the remaining claims is dependent on claim 1 and therefore contains these limitations. As noted in the Official Action, the methods as claimed are enabled. As amended, the claimed subject matter is enabled and the application is in compliance with the requirements of the first paragraph of section 112.

Applicants respectfully request that the rejection of claims 1-15 and 32 under 35 U.S.C. §112, first paragraph, as applied to claims 1-4, 6-11, 13-15 be withdrawn.

Rejection under 35 U.S.C. §102

Claims 1-3, 5-12, 15 and 32 have been rejected under 35 U.S.C. §102 as being anticipated by Kishimoto et al. (EP 0846949).

Kishimoto discloses methods of detecting cancer cells by removing CD34+ cells and determining expression of the WT1 gene. The WT1 gene encodes an oncofetal protein.

Claim 1, has been amended to specifically recite that the marker is a differentiation specific antigen, which as discussed on page 15 of the specification is distinct from oncofetal proteins. Each of the remaining claims is dependent on claim 1 and therefore contains these limitations.

As amended, the claims are distinguished from Kishimoto. Kishimoto neither discloses nor suggests eliminating CD34+ cells in methods to detect the presence of a differentiation specific antigen. Kishimoto is solely directed at detecting a oncofetal protein that is expressed by cancer cells or early in developmental stages. Nothing in Kishimoto suggests that the methods of Kishimoto are

relevant to cancer detection using distinctly different markers, *i.e.*, markers that are expressed in some normal differentiated cells.

One skilled in the art would have no expectation that background due to illegitimate transcription in detection assays for detecting the presence of mRNA that encodes a differentiation specific antigen could be eliminated by eliminating CD34+ cells. This result is unexpected and nothing in Kishimoto remotely suggests such a result can be accomplished. As amended, the claims are distinguished over Kishimoto.


Applicants respectfully request that the rejection of claims 1-3, 5-12, 15 and 32 under 35 U.S.C. §102, as applied to claims 1-3, 6-11 and 15 be withdrawn.

Conclusion

For the foregoing reasons, Applicants respectfully urge that 1-4, 6-11, 13-15 and new claims 37-48 are in condition for allowance. A Notice of Allowance is earnestly solicited.

Respectfully submitted,

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